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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,384	02/27/2004	Klaus Goller	INFN/0061	4918

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EXAMINER

SEFER, AHMED N

ART UNIT PAPER NUMBER

2826

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/789,384

Applicant(s)

GOLLER, KLAUS

Examiner

A. Sefer

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 12-20 is/are pending in the application.
- 4a) Of the above claim(s) 5-9 and 12-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 16-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed April 12, 2005 has been entered. Claims 10-11 have been cancelled and new claims 16-20 have been added.

Drawings

2. The drawings, as noted in previous Office Action, are objected to because reference numeral 33 (see page 17, par. 0058) is not shown in the drawings. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 2826

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 16 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation “the first conductor is electrically connected to the first conductor ... active region” recited in claim 16 is not understood.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Dunn et al. (“Dunn”) USPN 5,705,407.

Dunn discloses in fig. 5 a semiconductor device, comprising: a substrate having a process surface; a first contact 31/33 and a second contact 39 arranged on the substrate, a second contact surface of the second contact being at a greater distance, in a substrate-normal direction, from the substrate than a first contact surface of the first contact; a first patterned metal plane in which a first conductor 45 is disposed above the first contact in the substrate-normal direction and electrically connected to the first contact surface; and a second patterned metal plane in which a

Art Unit: 2826

second conductor 47 is disposed above the second contact in the substrate-normal direction and electrically connected to the second contact surface; wherein the second metal plane is disposed at a greater distance, in the substrate-normal direction, from the substrate than the first metal plane, wherein the second contact is electrically connected to the second conductor without an intermediate connection to any conductor of the first metal plane; and wherein the first conductor is electrically connected to another second conductor in the second patterned metal plane which is disposed above the first conductor in the substrate-normal direction.

Regarding claim 2, Dunn discloses an emitter second contact 39 and a base first contact 31/33 of a bipolar transistor.

7. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Koyanagi et al. ("Koyanagi") US PG-Pub 2001/0005059.

Koyanagi discloses in fig. 2 a semiconductor device, comprising: a substrate having a process surface; a first contact 26 and a second contact 24 arranged on the substrate, a second contact surface of the second contact being at a greater distance, in a substrate-normal direction, from the substrate than a first contact surface of the first contact; a first patterned metal plane in which a first conductor 34 is disposed above the first contact in the substrate-normal direction and electrically connected to the first contact surface; and a second patterned metal plane in which a second conductor 42B is disposed above the second contact in the substrate-normal direction and electrically connected to the second contact surface; wherein the second metal plane is disposed at a greater distance, in the substrate-normal direction, from the substrate than the first metal plane, wherein the second contact is electrically connected to the second conductor without an intermediate connection to any conductor of the first metal plane; and

Art Unit: 2826

wherein the first conductor is electrically connected to another second conductor 42B in the second patterned metal plane which is disposed above the first conductor in the substrate-normal direction.

Regarding claim 2, Koyanagi discloses a source contact and a gate contact of a MOS transistor.

Regarding claim 3, Koyanagi discloses (pars. 0059-0061) the first contact is connected to the conductor of the first metal plane via a first contact hole (unnumbered) which extends in the substrate-normal direction and is filled with an electrically conductive contact-hole filling material.

Regarding claim 4, Koyanagi discloses (pars. 0059-0061) the second contact is connected to the second conductor of the second metal plane via a second contact hole, which extends in the substrate-normal direction and is filled with an electrically conductive contact-hole filling material.

8. Claims 18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Koyanagi.

Koyanagi discloses in fig. 2 a semiconductor device, comprising a substrate having a process surface; a first contact 26 and a second contact 24 arranged on the substrate, a second contact surface of the second contact being at a greater distance, in a substrate normal direction from the substrate than a first contact surface of the first contact; a plurality of first conductors 34 disposed in a first patterned metal plane in which one of the first conductors being disposed above the first contact in the substrate normal direction and directly connected to the first contact surface through a first contact hole filled with conductive material (pars. 0059-0061); and a plurality of second conductors 42B disposed in a second patterned metal plane in which one of

Art Unit: 2826

the second conductors is disposed above the second contact in the substrate-normal direction and directly connected to the second contact surface through a first contact hole filled with conductive material (pars. 0059-0061); wherein the second metal plane is disposed at a greater distance, in the substrate-normal direction, from the substrate than the first metal plane; and wherein the first conductor is directly connected to another one of the second conductors in the second patterned metal plane which is disposed above the first conductor in the substrate-normal direction.

Regarding claim 20, Koyanagi discloses a source first contact of a MOS transistor.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koyanagi in view of Yokoyama ("Yokoyama") US PG-Pub 2001/0029079.

Koyanagi discloses the device structure as recited in the claim but lacks anticipation of first and second contacts being an emitter and base contacts of a bipolar transistor respectively.

Yokoyama discloses in fig. 5 a semiconductor device, comprising: a substrate having a process surface; a second emitter contact 11 and a first base contact 6 of a bipolar transistor

Therefore, it would have been obvious to one skilled in the art at the time the invention

Art Unit: 2826

was made to incorporate Yokoyama teachings since that would provide the advantages of both MOS and bipolar transistors.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (571) 272-1921.

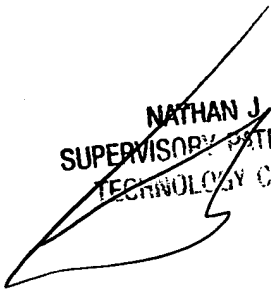
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915.

Art Unit: 2826

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ANS

June 24, 2005


NATHAN J. FLYNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800